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# **IETF IPORPR (IP over Resilient Packet Rings) Input to 802.17 RPRWG**

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802-17-01-00002  
aph\_iporpr\_02.pdf

# IPoRPR WG Status

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- WG revised draft released June, 2001;  
draft-ietf-iporpr-framework-01.txt
- Draft concentrates on input to for 802.17  
vs. modifications to L3 protocols
- WG to meet in 51st IETF August 2001

# IPORPR Framework

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## Objective:

- to articulate a set of features and functionality that will allow IP to integrate smoothly with the RPR MAC functions as per IEEE 802.17 RPRWG
- IPORPR Framework will present input to IEEE 802.17 RPRWG for consideration.
- The intent is to align the needs of the Internet and IP with the emerging 802.17 standard

# IPORPR Framework

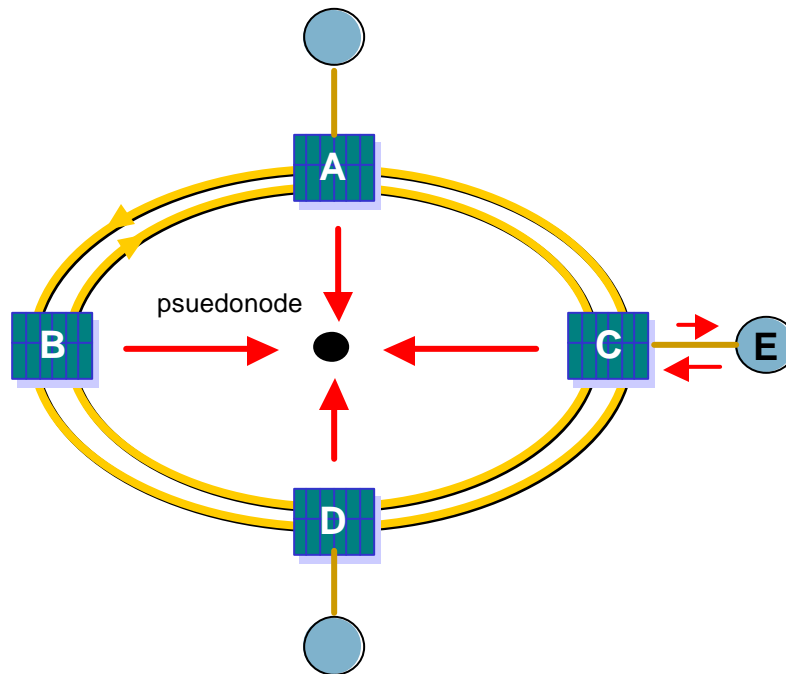
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## Three approaches presented:

- RPR as a broadcast, multi-access network;  
No changes to IP; L3 operates as in Ethernet
- RPR providing appropriate Service Interface to tap developing RPR features (i.e. QoS guarantees, customer separation) for any L3 Signaling or TE capabilities
- Enhanced L2/L3 awareness for improved L3 metrics control, fault interaction and TE capabilities.

# Primary Requirement: No changes to IP

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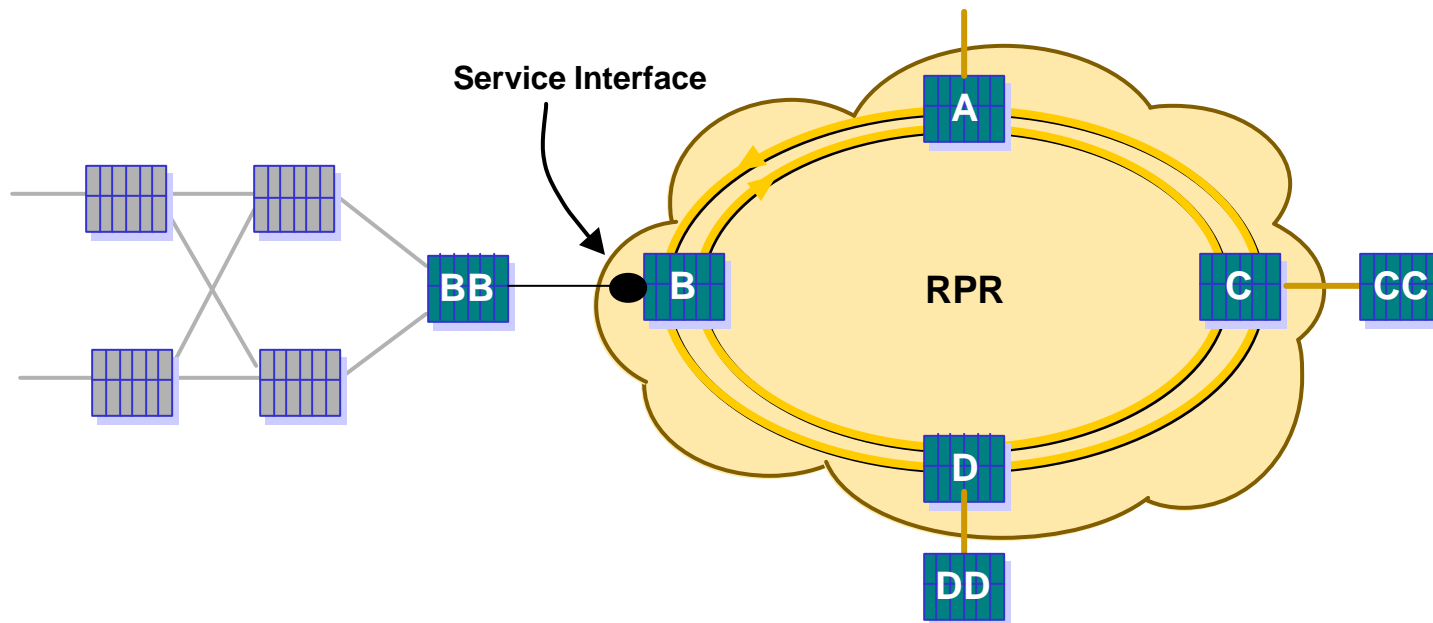


## RPR as a Multi-access, Broadcast media

- Logical view from E of RPR as a multi-access network similar to Ethernet; all nodes one hop away
- Shortest path, in terms of ring direction, determined at link layer

# RPR Service Interface

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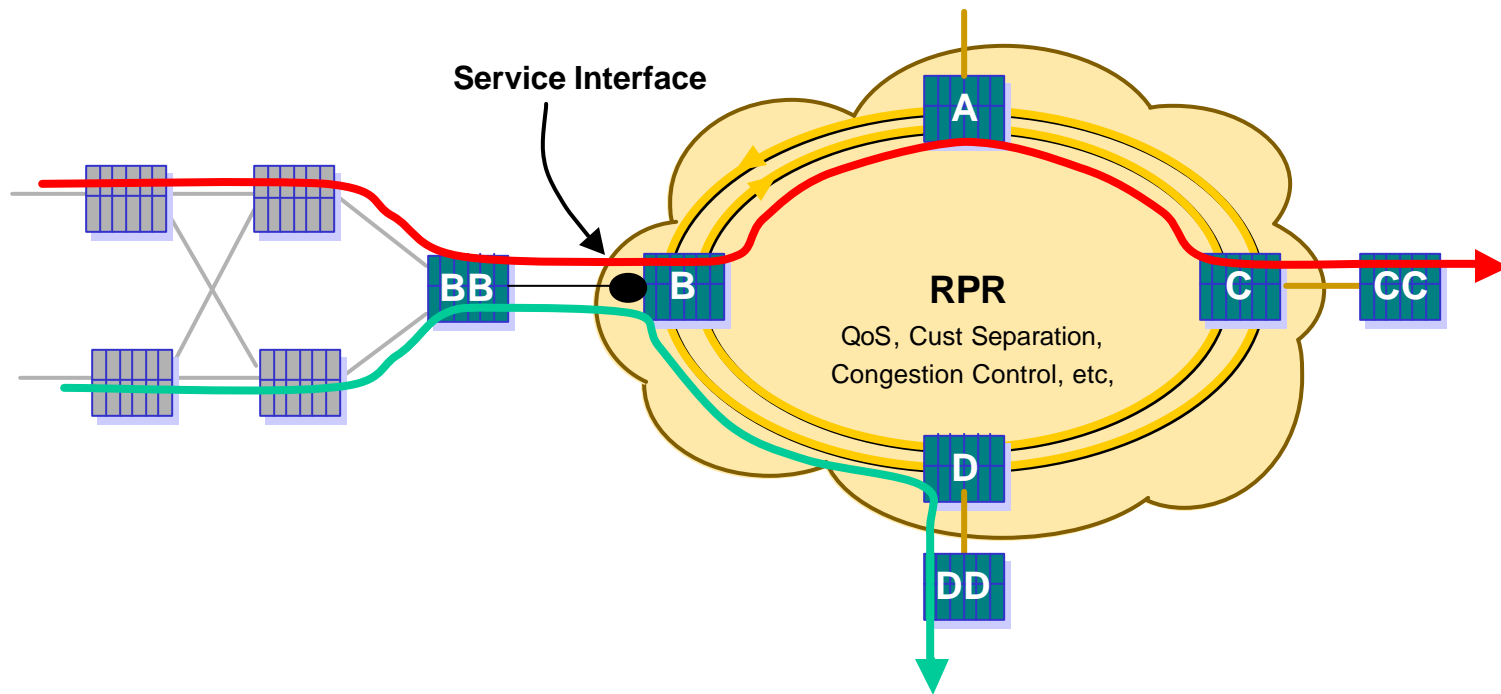


## Service Interface to RPR Features

- Signaling/TE parameter handoff to L2 for service specific requests

# RPR Service Interface

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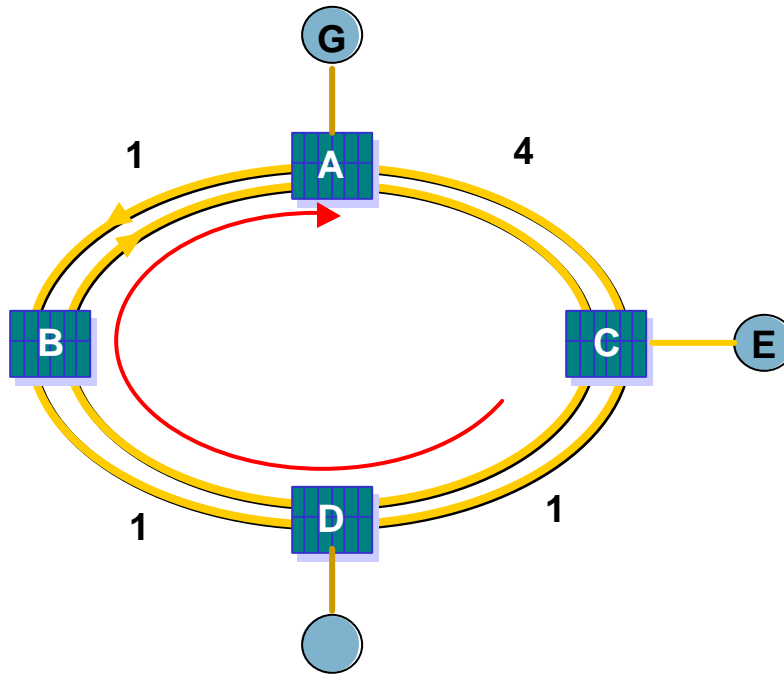


## Service Interface to RPR Features

- Parameter interface at ingress RPR node for specific service request to an RPR egress node
- Shortest path, bandwidth guarantees, Protection / QoS treatment, traffic isolation, etc. determined and performed at L2

# Enhanced L2/L3 Interaction

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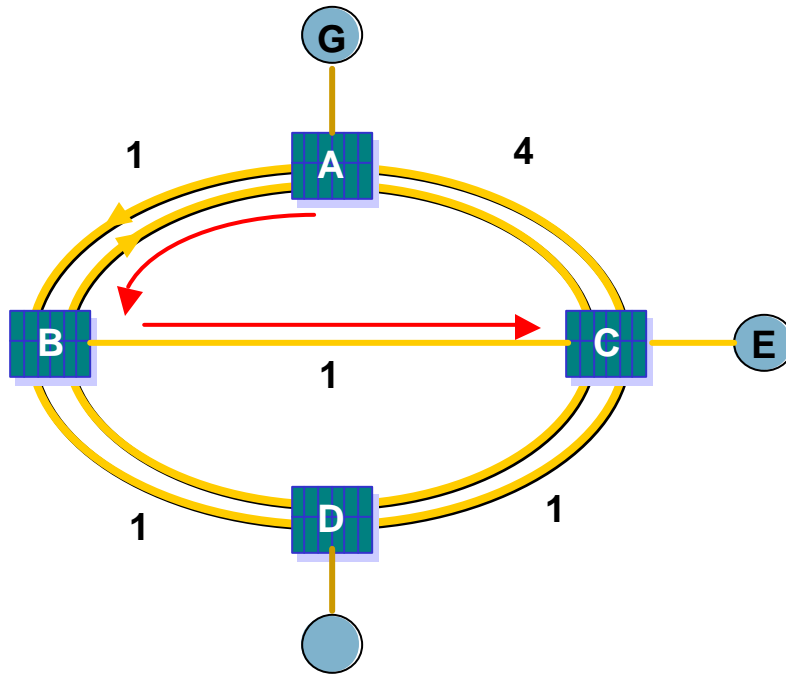
## L3 Adjacency Awareness

- View from ring nodes reflect actual physical point-to-point spans
- Cost can be associated to spans better reflecting link cost/distance
- After SPF computation, E will reach G via C,D,B,A



# Enhanced L2/L3 Interaction

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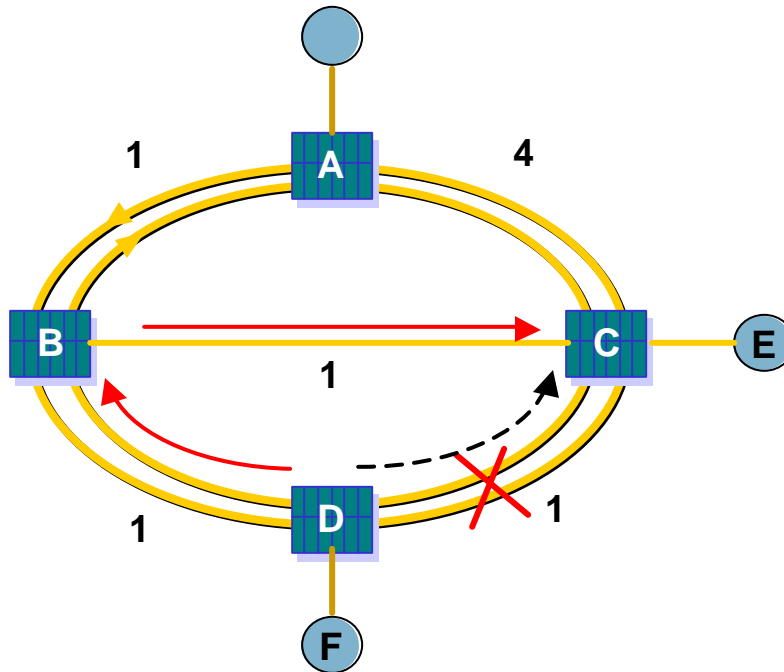


## Interaction with mesh topologies

- Point-to-point link bisects RPR ring, spans assigned appropriate link costs
- G will reach E via A,B,C skipping D

# Enhanced L2/L3 Interaction

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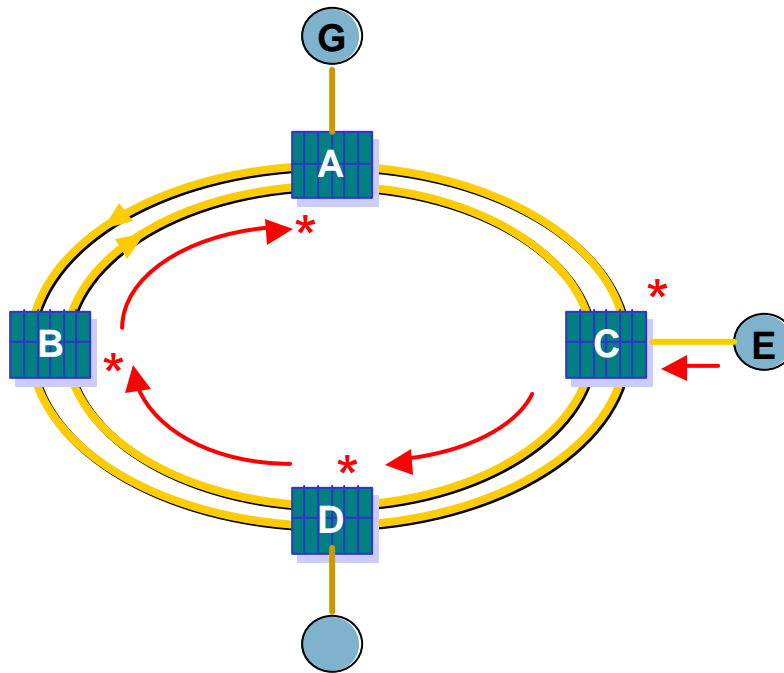


## L2/L3 fault interaction

- F will reach E via D,B,C skipping A during wrap/steer

# Enhanced L2/L3 Interaction

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## MPLS TE Support

- Modeled as point-to-point links, allow proper accounting <sup>\*</sup>, CAC functions (not just on Ingress node as in multi-access model)
- Allows TE tunnels to take the long path

# IPORPR Framework

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## Input for 802.17 RPRWG

- IP should be able to treat RPR as a traditional Multi-access, broadcast media
- Allow an IP service interface for transport service across an L2 RPR network
- Allow enhanced L2/L3 interaction for better L3 control and protection response

# Subscribe Information

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## IPoRPR WG

- General Discussion: [iporpr@external.cisco.com](mailto:iporpr@external.cisco.com)
- To join email reflector send mail to :  
  
**[iporpr-request@cisco.com](mailto:iporpr-request@cisco.com)**  
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